



# **Allergy Therapeutics**

Interim results for the six months ending 31 December 2017

Delivering on our strategy – three areas for growth



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### **Introduction to Allergy Therapeutics**

Dedicated to allergy treatment and prevention



Leading allergy immunotherapy company with a portfolio of marketed products and strong development pipeline

Provide treatments that have potential to cure disease, not just symptoms. Focus on moderate to severe patients

Approximately 500 employees

Headquartered and manufacturing base in Worthing, West Sussex

Market capitalisation of approximately £150m, AIM ticker LSE:AGY

Double digit compound annual growth achieved over the past 18 years

Robust revenue growth and successful M&A delivered. Three pillar strategy for growth: Europe, pipeline and US

Spun out of Smith Kline Beecham in 1999

Products currently in trials for the US market





### Financial highlights

~ Double digit compound annual growth achieved over the past 18 years ~

1.3%\*

increase in revenue at constant currency\*\* to

£40.9m

(H1 2017: £40.4m)

4.4%



increase in revenue at

£42.2m

(H1 2017 £40.4m)

Solid growth in operating profit pre R&D up

12% to £12.3m

as a result of leveraging sales growth, a stated aim of management (H1 2017: £11.1m)

R&D expenditure of

£5.9m

(H1 2017: £3.8m)

Cash balance of

£25.8m

(H1 2017: £27.8m)

N.B. All financial dates refer to the financial year. All clinical dates refer to the calendar year.



<sup>\*</sup>Percentage based on numbers in thousands (H1 2018: £40.956m, H1 2017: £40.427m)

<sup>\*\*</sup> Constant currency uses prior year weighted average exchange rates to translate current year foreign currency denominated revenue to give a year on year comparison excluding the effects of foreign exchange movements. See table in financial review for an analysis of revenue.



# Increased market share in Germany

14%

(2017: 13%)

### **Operational highlights**



Solid revenue growth across Europe – strong performance from Venomil and Acarovac Plus



Completion of recruitment for pivotal Phase III Pollinex Quattro Birch trial

Completion of recruitment for US Grass Mata MPL Phase II trial ahead of schedule



Contract for scale up of Polyvac peanut signed with aim for first trial in humans in 2019



Acarovac Phase I trial continues with read out expected in H1 2019



Contract for Oralvac joint development signed with Ergomed. TAV projects on track









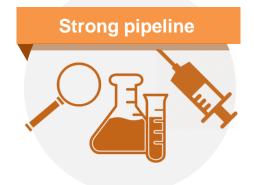
### **Delivering our strategy**

### Three pillars to the business



Strongly performing profitable business

Growing market share and additional product registrations



New technologies underpin pipeline breadth and depth

Investment strategy supported by growing revenue stream



Significant opportunity in largest allergy market

Changing environment to drive market share towards Allergy's products





## **Delivering our strategy**

# **EXPANDING IN EUROPE**







### **Delivery of European growth strategy**

Solid sales growth of 1.3%\* in H1 2018 and increased German market share to 14% from 13% driven by:

Innovative, convenient and patient-friendly (short-course) products

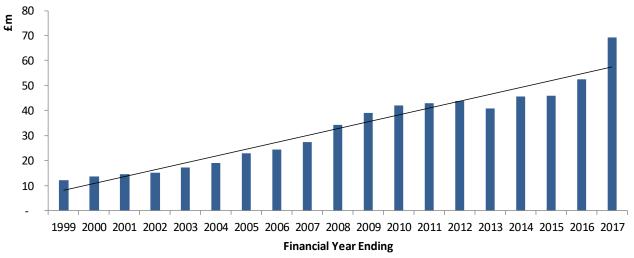
Increased regulatory requirements to ATL advantage (TAV)

Focused investment across business reflected in performance

Strength of broad portfolio with Acarovac Plus and Venomil

Scaling-up to drive technological and geographical expansion

### Double digit CAGR growth over the last 18 years since formation (full year data)



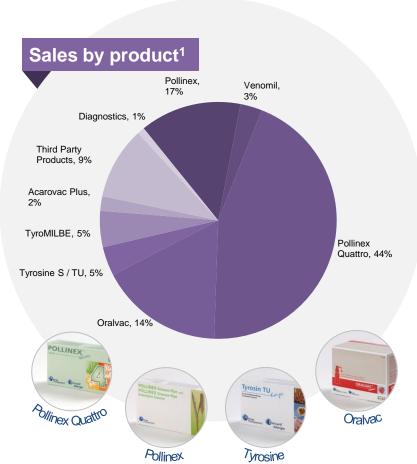
Gross Revenue (excludes rebates)

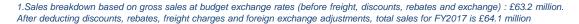




### Sales breakdown for FY 2017











# **Delivering our strategy**

# STRONG PIPELINE







### **TAV (Therapy Allergy Ordinance) process**



TAV German process initiated in 2008 and driven by the Paul Ehrlich Institute based on European legislation



Includes all products without registration

**Germany contributes** 59% of AGY Group sales **40% of all submitted products have now been removed from the process** and are no longer on the market (PEI Seminar, 2017)

Future advantage of clinical evidence to support marketing plus potential reduction in competition

All of Allergy's products submitted in 2011 are still in process





# **Broad pipeline**

	Pre-clinical	Phase I	Phase II	Phase III	Market/Registered	Also available as a Named Patient Product
Pollinex Grass			Short-course SCIT			
Pollinex Tree			Short-course SCIT			
Pollinex Ragweed			Short-course SCIT			
Venomil Bee			Bee venom SCIT			
Venomil Wasp			Wasp venom SCIT			
Pollinex Quattro Grass	*	Short-course Gras	ss SCIT with MPL			✓
Pollinex Quattro Birch		Short-course Bird	h SCIT with MPL			<b>─</b>
Pollinex Quattro Ragweed		Short-course Ragwe	eed SCIT with MPL			-
Pollinex Quattro Grass	** Sho	ort-course Grass SCIT with N	MPL			
Pollinex Quattro Trees	Sh	ort-course Tree SCIT with M	PL			✓
Oralvac Grass, Trees & house dust mite	Sublingua	I immunotherapy with flexible	e-dosing			
Acarovac Platform	Short-course modified Al	lergen HDM SCIT + MPL				<b>✓</b>
Polyvac Peanut	Short-course Peanut SCIT					

<sup>\* - 0.5</sup>mL formulation \*\* - 1.0 mL formulation





### **Pipeline trials**

#### PQ Birch - Phase III (Germany - TAV process)

- Recruitment completed and patients already being treated
- Results expected H2 2018
- If successful, regulatory submission 2019

### PQ Grass - Phase II (US & Germany TAV process)

- Recruitment completed early and patients already being treated
- Results expected ahead of schedule in early H2 2018
- If successful, second Phase III study to follow in US/Europe

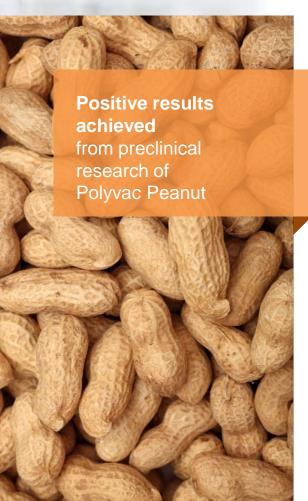
#### **Acarovac MPL Phase I**

- Trial with 32 patients in progress in Spain
- Results expected H1 2019
- Potential for US market with two Phase III trials





### Polyvac peanut product



Single dose of virus like particle (VLP) combined with recombinant peanut allergen successfully protects against anaphylaxis when challenged with peanut

Those vaccinated with candidate vaccine exhibited no symptoms compared to placebo, when challenged with peanut

Safety profile of product evaluated and found **not to induce anaphylaxis** 

Manufacturing contract for scale-up of Polyvac product signed with Biomeva with aim of having first in human trial in 2019

Peanut represents a new opportunity into \$8bn\* worldwide food allergy market

Pre-clinical development progressing according to plan with important product differentiation demonstrated – aim is long-term immunity





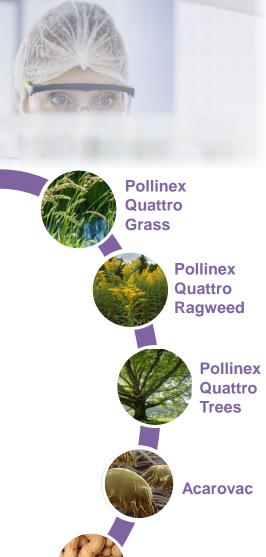


## **Delivering our strategy**

# PREPARING FOR US ENTRY







Polvvac

**Peanut** 

### Portfolio of products to capture US opportunity

- √ Proprietary, IP protected technology
- ✓ De-risked opportunity
  - Treated more than 250,000 patients and marketed in 7 countries (pollens)
- √ First mover advantage
  - First to market in the seasonal injected segment
  - High entry barriers: regulatory requirements for extensive trials on efficacy and safety
- ✓ Strategic fit for US market
- ✓ Building on progress to date in the US:
  - \$100m invested in clinical studies to date
  - 15 clinical trials completed to date, including Phase I, II & III successful studies
  - Investigated in over 3,000 patients worldwide, mainly in the US



### The evolving US opportunity



<sup>\*</sup> Hankin CS, Cox L, Lang D, et al 2007 JACI



<sup>\*\*</sup>Internal estimate

<sup>\*\*\*</sup>Professor Lawrence DuBuske MD







### P&L – six months ended 31 December 2017

	H1 2018 £'m	H1 2017 £'m	Variance £'m	%
Revenue	42.2	40.4	1.8	4%
Gross profit	33.5	31.5	2.0	6%
Overheads	(21.4)	(20.5)	(0.9)	(4%)
R&D	(5.9)	(3.8)	(2.1)	
Other Income	0.2		0.2	
Operating profit	6.4	7.2	(0.8)	
Net Financing costs	(0.0)	(0.0)	0.0	
Tax	(0.4)	(0.4)	(0.0)	
Profit after tax	6.0	6.8	(0.8)	

Solid sales performance	
in abnormally weak pollen season	

### Sales drive gross profit growth

# Overheads up due to FX and investment

**Significant R&D investment last year** in US Grass study and PQ Birch in Europe

Operating profit pre-R&D of £12.3m (H1 2017: £11.1m) due to investment, leveraging solid sales





### Sales – six months ended 31 December 2017

	H1 2018 £'m	H1 2017 £'m	Variance £'m	%
Gross Revenue at Constant Exchange Rate	44.9	44.3	0.6	1%
Rebate at Constant Exchange Rate	(4.0)	(3.9)	(0.1)	(3%)
Net Revenue at Constant Exchange Rate	40.9	40.4	0.5	1%
Effect of Foreign Exchange	1.3		1.3	
Net Revenue	42.2	40.4	1.8	4%
* Constant exchange rate Euro/£ Current exchange rate Euro/£	1.16 1.13	1.16		

# **Strong sales increases in Spain and Eastern Europe**

Most markets	
performing robustly	

Strong growth in Venomil and Acarovac Plus

**FX impact much lower in this period** as smaller difference between rates





### **Balance sheet at 31 December 2017**

	2018	2017	Var
	£'m	£'m	£'m
Non-current assets			
Property, plant and equipment	9.8	9.7	0.1
Intangible assets	5.1	5.4	(0.3)
Investments	4.9	4.3	0.6
	19.8	19.4	0.4
Current Assets			
Trade and other receivables	10.9	10.7	0.2
Inventories	8.4	7.0	1.4
Cash	25.8	27.8	(2.0)
Liabilities			. ,
Financing liabilities	(3.2)	(3.4)	0.2
Other liabilities	(25.8)	(23.0)	(2.8)
Net assets	35.9	38.5	(2.6)
Equity			
Share capital and share premium	103.0	103.0	0.0
P&L account and other reserves	(67.1)	(64.5)	(2.6)
	35.9	38.5	(2.6)
	35.9	38.5	(2.6)

# Increase in non-current assets driven by increase in pension investments

Inventory higher
due to preparation for clinical trial
material
Cash position

Debt of £3.2m
Seasonal overdraft in place (undrawn)

# Other liabilities increase due to R&D creditors

of £25.8m





### Cashflow for the six months ended 31 December 2017

	20	2018		17
	£'m	£'m	£'m	£'m
Opening cash balance 1st July (Loss)/Profit before tax	6.4	22.1	7.2 (1.7)	23.4
Adjustments re operations  Net cash (used)/ generated by operations	(2.1)	4.3	(1.7)	5.5
Tax received/paid Interest paid		0.7 (0.1)		0.0 (0.1)
Interest received Investments and acquisitions Capital expenditure Net cash used in investing activities	0.1 (0.2) (1.0)	(1.1)	0.1 (0.1) (1.4)	(1.4)
Proceeds from issue of shares Net movement in borrowings Net cash generated in financing activities	0.0 (0.1)	(0.1)	0.0 (0.1)	(0.1)
Effects of exchange rates on cash		0.0		0.5
Closing Cash Balance 31 December		25.8		27.8

**Positive net cash generated** by growth in business and foreign exchange benefit

**Significant tax received** due to R&D tax credit from 2017 financial year

**Strong Cash position** of £25.8m driven by solid performance and timing of R&D investment







# Summary and outlook



# Summary and outlook 2018 set to be a pivotal year

### Solid trading in H1 2018:

1.3\*%

sales growth at constant currency

14%

market share Germany



Delivering against our strategy: three pillars to growth



Robust financials set to continue



Clinical trials progressing as planned – broad pipeline underpinned by innovative technologies



Focused strategy to be first to market in the US SCIT segment



2018 set to be a pivotal year:

- Growth and expansion in European business
- Results of pivotal Birch Phase III trial and US Grass Phase II trial
- Robust future product development pipeline

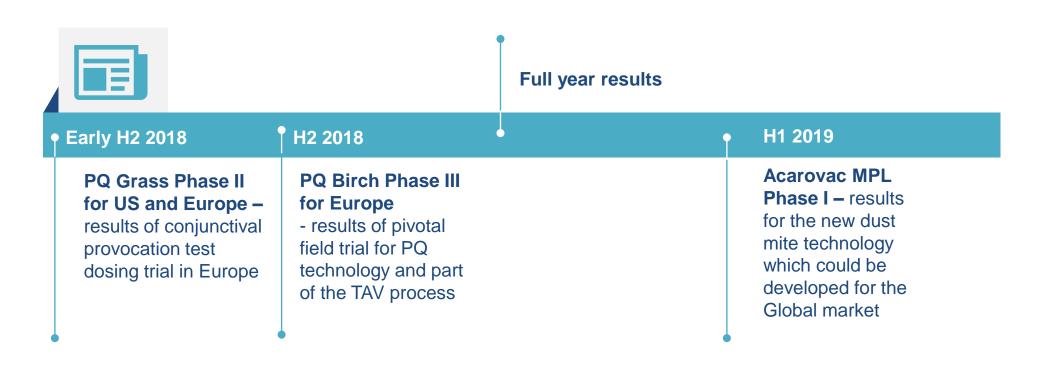


Board remains confident about Group's future prospects





### 2018 expected key value driving newsflow









# **Analysis of regulated products**

	Named patient basis	Approved <sup>1</sup>	German TAV process	US Process	Other Clinical trials
Vaccines					
Pollinex	Х	Х			
Pollinex Quattro Grass	Х		X	X	
Pollinex Quattro Birch	Х		X		
Pollinex Quattro Ragweed	Х			X	
Pollinex Quattro Trees	Х		Х	X	
Pollinex Quattro Grass & Birch	Х		X		
Pollinex Quattro Grass & Tree	Х		X		
Pollinex Quattro Grass & Mugwort	Х		Х		
Acarovac Plus	X	X			
Acarovac MPL					X
TyroMILBE	X		Х		
Venomil	Х	X			
ТА Тор	Х				
Oral					
Oralvac Grass	Х		X	_	
Oralvac Trees	Х		X		
Oralvac House Mite	X		Х		

Trials in process

CMC process



Trials undertaken

<sup>&</sup>lt;sup>1</sup> Approved in Germany or other major market



### **Global presence**



Subsidiaries in 7 countries and distribution agreements in additional 14 countries





### Changing US landscape to drive market share



#### Home made, unlicensed preparation

Non GMP manufacturing
Non registered
No clinical evidence

**Long** courses of treatment: **50 to 100** injections

Slow to act: 6 to 12 months

**Low** compliance

New USP and FDA
regulations drive
towards
pharmaceutical
grade, centrally
manufactured, single
allergen treatments

Allergy Therapeutics' entry in the US



#### Standardised dose vaccine

GMP manufactured FDA submission Multiple clinical studies

Ultra- short course treatment: 4 to 6 injections

Efficacy in 3 weeks

**High** compliance





### **Microcrystalline tyrosine (MCT)**

### **Patent protection for MCT**

Processing patent covers MCT

MCT particles are formulated as sterile in state of the art processes enabling defined particle morphology and size optimised for binding to wide variety of antigens. MCT Process patent extended-UK (2032)/EU filing 2032

### R&D update Allergy / Non – Allergy indications

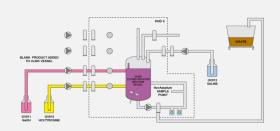
Within the last 12 months, studies have been completed supporting MCT use as a depot immunomodulator in each application:

Key publication in The Journal of Inorganic Biochemistry provides insight to the role of the (MCT) for use in existing and future therapeutic development incl. synergies with MCT and MPL in our Pollinex Quattro brand

MCT improves efficacy in non-allergy models (Influenza, Malaria) – Public Health England, University of Oxford (Jenner Institute), respectively. (publication in preparation)

Immunomodulation of MCT in allergy (publication pending 2016) – University of Zurich

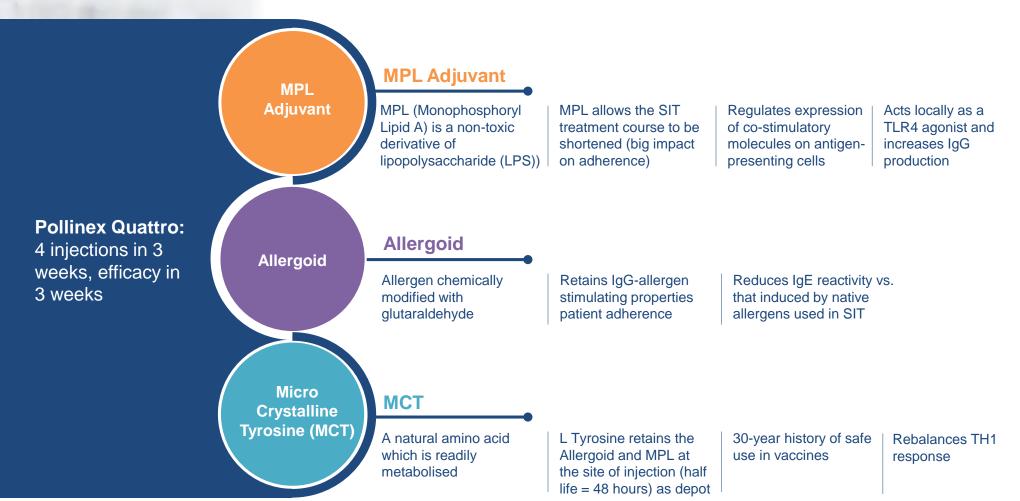
MCT to enhance immunogenicity of different vaccines – for malaria study







### PQ: a unique platform technology







### Acarovac MPL house dust mite product



Phase I first patient treated in June 2017 as part of 32 patient trial (AM101)

Acarovac product without MPL growing well in Spain and Austria

Potential of 8 injection model compared to 12-15 average of competitors and once a day for 3 years oral treatment

Results of Phase I Trial expected H1 2019

Market opportunity of \$3-4bn\* worldwide with only Europe partly tapped already

Potential additional product in US portfolio following two Phase III trials







### **Bencard Adjuvant Systems division**

### **Strategy**

MCT, MPL & VLP Researching on MCT mechanism of action

Potential for licencing or use in development of products to boost efficiency

#### **Studies**

Pre-clinical study using MCT in a seasonal influenza model – elicited immune response indicative of protection

Pre-clinical model using MCT and VLP in malaria – offered best protection compared with antigens formulated with aluminium

Studies show MCT both alone and in adjuvant system elicit high, sustained antibody titres demonstrating enhanced protective efficacy compared to conventional adjuvants including aluminium





# **Platform technologies**

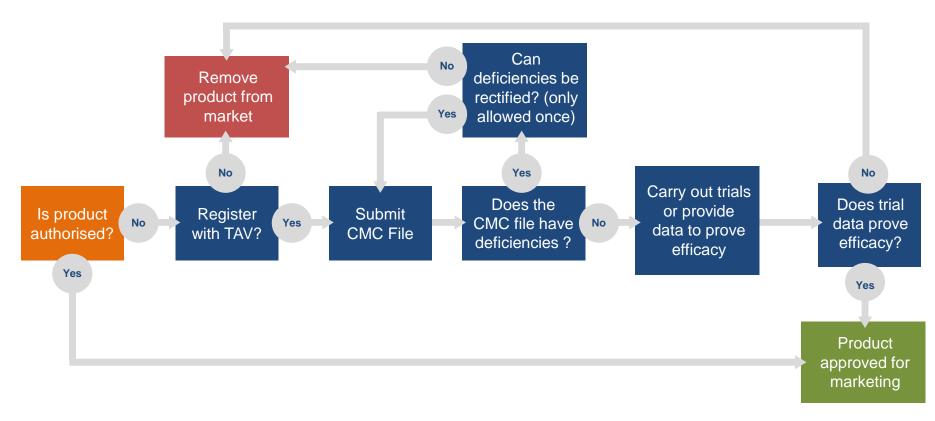
	Modified Allergen (Allergoid)	Native Allergen	Recombinant Allergen	Microcrystalline Tyrosine (MCT)	Monophosphoryl Lipid A (MPL)	Virus-Like Particles (VLP)
Pollinex	✓	-	-	✓	-	-
Pollinex Quattro	<b>√</b>	-	-	<b>✓</b>	<b>√</b>	-
Oralvac	-	<b>✓</b>	-	-	-	-
Acarovac Plus	✓	-	-	<b>✓</b>	_	-
Acarovac MPL	✓	-	-	<b>✓</b>		-
Venomil	-	<b>✓</b>	-	-	-	-
Peanut*	-	-	<b>√</b>	✓	-	<b>√</b>



<sup>\* -</sup> Product under pre-clinical investigation, full product profile yet to be determined



### **TAV** process



#### Notes:

- 1. While in the TAV process all products can continue to be sold. Once rejected they must be removed from the market
- 2. All products must either have been approved or must go through the TAV process
- 3. The trials needed are tolerability, dose ranging and efficacy

